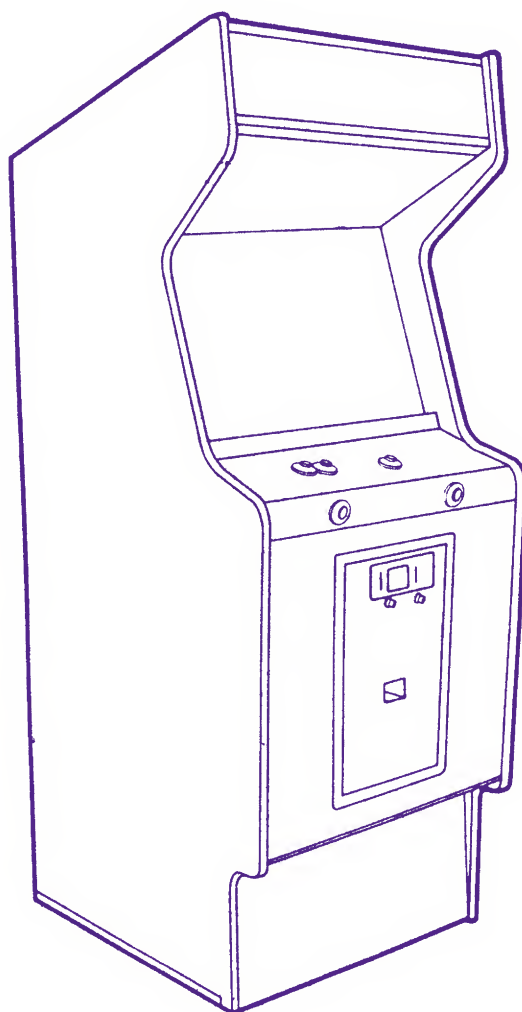


Gremlin[®]/SEGA[®]

MOON CRESTA

Service Manual & Parts Catalog



GREMLIN INDUSTRIES, INC.

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SPECIFICATIONS

* Space Requirer	-----	638 mm x 703 mm
* Game Height	-----	1722 mm
* Power Source	-----	AC 100V~240V
* CRT	-----	20 Color TV
* Power Consumption	-----	120 W

Note : These instructions and specifications may be changed without prior notification. If this machine is reconstructed without our permission, we can not take responsibility for the machine.

1 INSTALLATION

1. As the SEGA Monaco GP is for "indoor use", do not install outdoors.
2. When installing, avoid the following places.
 - Near indoor pools or showers
 - Where leaks exist
 - Under direct sunlight
 - Near heaters or other heat emitting devices
 - Where hazardous items (volatile fluids, gas cylinders etc.)
 - Where vibrations are severe (near construction sites where jack hammers etc. are used)
 - Inclined places
 - Near fire extinguishing equipment
 - Near emergency exits
 - Set power transformer changeover switch to 110V in locations where the power is normally below 90V.

2 CARE IN OPERATION

1. Inspection
 - Are the IC boards and other connectors firmly connected.
 - Connect ground wire as prescribed. (Never connect to gas pipes, water pipes or electrical conduits)
 - Arrange line cords and ground wires in the aisle so they will not be tripped over.
2. Care in Handling
 - Always turn off the power supply switch before handling.
 - Avoid inserting and pulling the plug in rapid succession.
 - Do not check the IC board circuit with a tester.
3. Care in Usage
 - Care should be taken to avoid dragging or dropping the machine when transporting to prevent damage to the CRT.
 - Use fuse of stipulated rating.
 - As high voltage is present in the monitor and TV PCB, adjustments or repairs should be left up to a serviceman and should never be touched by the layman.
 - As color alignment may become disturbed due to terrestrial magnetism when the machine is moved or its direction changed, demagnetize the unit by pushing the demagnetizing switch.
 - Refrain from holding the steering wheel or shift lever when transporting the machine.

3 Game Play

Gremlin/Sega "MOON CRESTA" is a one or two player game in which players may compete for highest score against the game computer. Each time a player is hit by an alien, the game switches to his opponent's sequence.

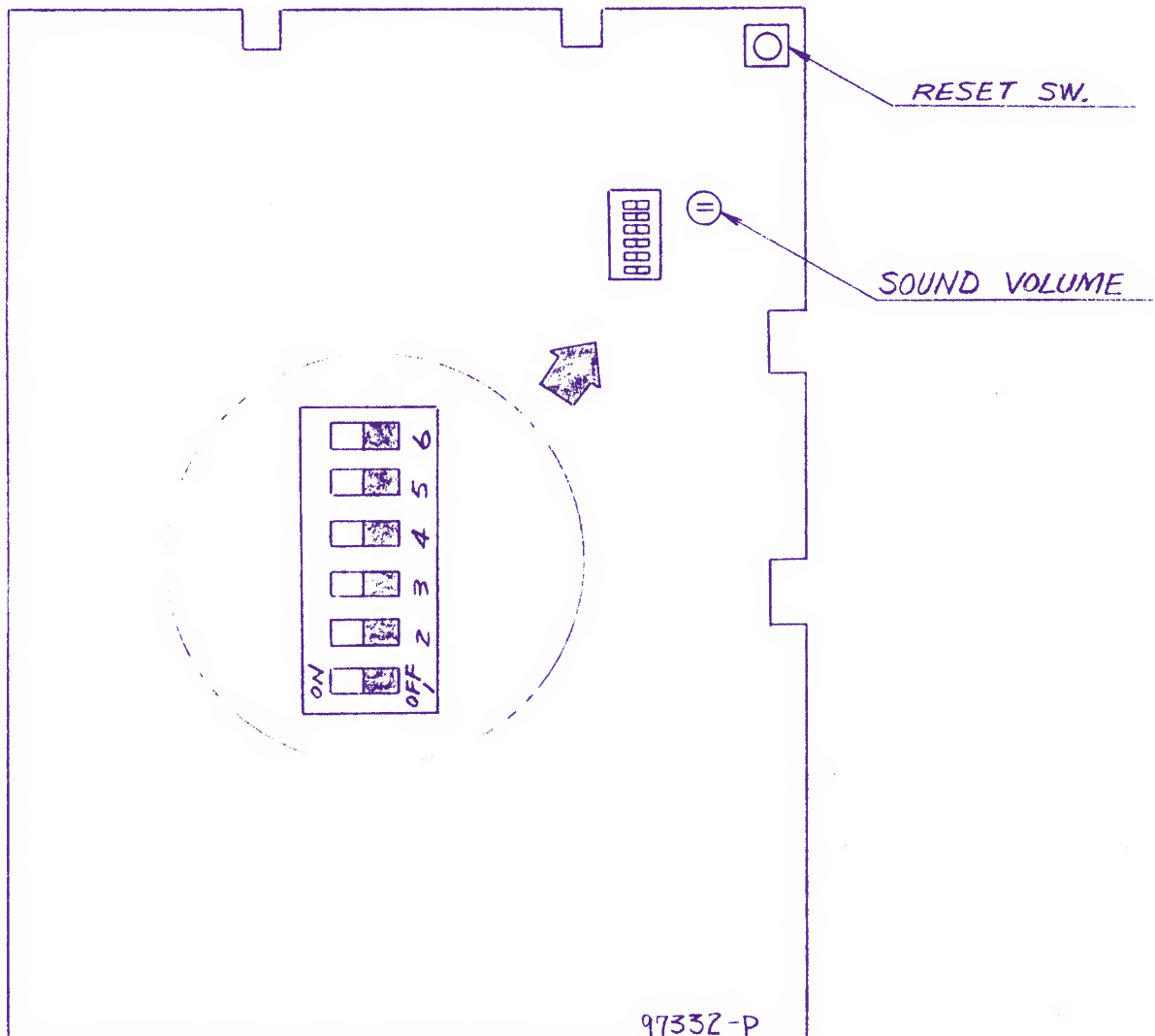
The object is to destroy as many of the descending aliens as possible. To accomplish this the player is given a three stage multi-fire Warship. He begins with the first stage, firing a single laser at the enemy. If he is successful in eliminating the first four sets of aliens, he is given an opportunity to dock his first stage onto the second within a specific time limit (the sooner he unites the stages, the higher is his awarded score).

Once docked, the stages combine their firing power, so the first (one laser) adds to the second (two lasers) giving the player a total of three usable lasers as the game continues.

The player then must face two more sets of aliens and a shower of meteors, after which he has a chance to dock again, this time uniting with the third stage for a combined fire power of five lasers. If he is able to defeat the last two sets of aliens intact, the entire sequence begins again. The game continues with increasing difficulty until the entire warship is destroyed. When the warship is hit the player continues with whatever stages remain. If his score reaches 30,000 he is awarded a free game and his score continues to accumulate.

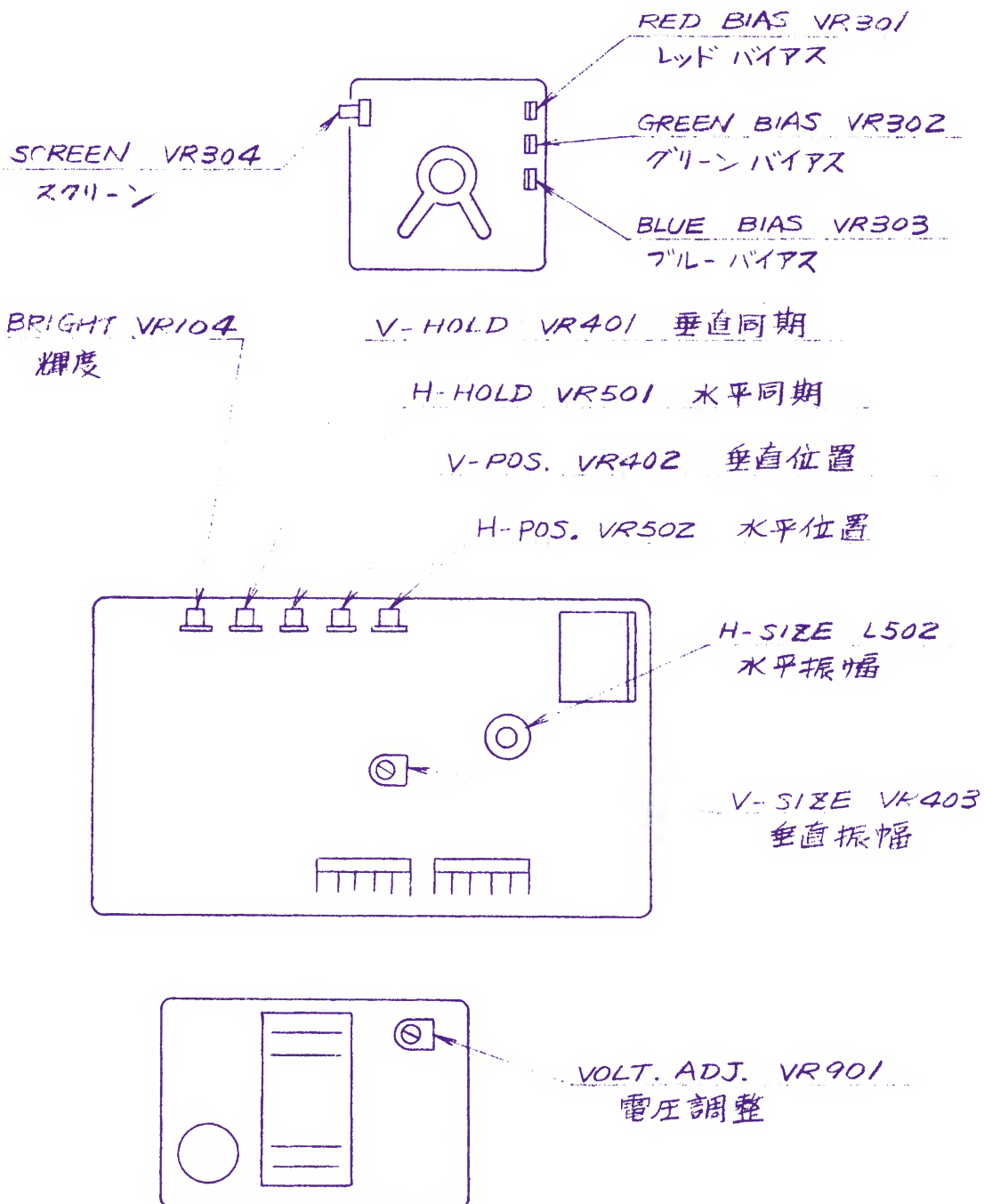
4 IC Board Adjustments

- Note :
- Switch adjustment have to be done after disconnect the power supply.
 - Switches are set as under-lined position when the machine is shipped.

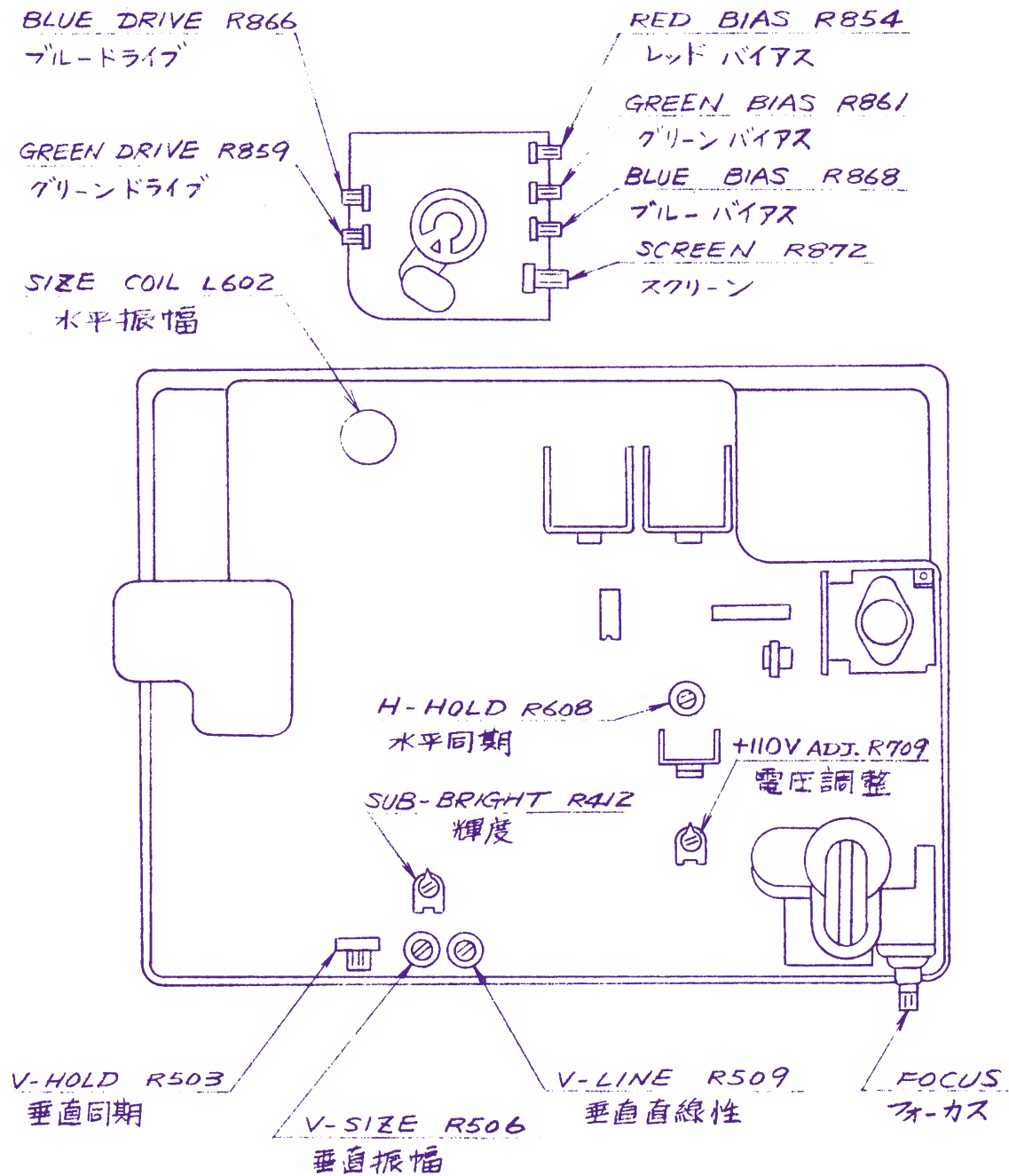


	SW. NO.					
	1	2	3	4	5	6
EXTENDED PLAY						
30000 PT.	OFF					
50000 PT.	ON					
		NOT USE				
COIN CHUTE 1						
1 COIN - 1 PLAY			OFF	OFF		
2 COIN - 1 PLAY			ON	OFF		
3 COIN - 1 PLAY			OFF	ON		
4 COIN - 1 PLAY			ON	ON		
COIN CHUTE 2						
1 COIN - 1 PLAY					OFF	OFF
1 COIN - 2 PLAY					ON	OFF
1 COIN - 3 PLAY					OFF	ON
FREE PLAY					ON	ON

5. TV VOLUME ADJUSTMENTS (1)
(NANAO TYPE)



5 TV VOLUME ADJUSTMENTS (2)
(SHARP TYPE)



5 Adjustable Controls

A. Brightness

Remember to observe the precautions regarding high voltages when you make any adjustments on this monitor!

Note that before you adjust the brightness, the monitor should have been turned on for at least 5 minutes. Keep the game in the attract or play mode.

Find the black plastic knob near the top center of the Neck Printed-Circuit Board or PCB, sometimes called the picture-tube socket board (see Figure 2). Turn this brightness (or screen voltage) control until you achieve a pleasing level of brightness.

Too high a brightness causes the retrace lines to show. Too low a brightness causes the entire screen to become dark and obscured.

B. Horizontal Hold

Use this adjustment if the picture drifts sideways across the screen. Find the two potentiometers on the right end of the Main PCB (as you face the monitor's screen)—see Figure 3. Turn the coarse or fine pot until the black lines no longer slant downwards or upwards, and you obtain a normal screen image.

C. Vertical Hold

Use this adjustment if the picture drifts straight up or down on the screen. The vertical hold control is the large black knob, third from the left on the Main PCB (as you face the monitor's screen)—see Figure 3.

Turn this control in either direction until the picture no longer drifts straight up or down on screen.

D. Vertical Linearity

Badly adjusted vertical linearity looks like the horizontal raster lines are "squashed" together in certain areas on the screen—usually at the top or bottom. Linearity tends to drift out of adjustment in high-temperature areas after the monitor has been used a long time, or if you replace the picture tube.

The vertical linearity control is located on the Main PCB, fourth from the left as you face the monitor screen. Turn it slowly until all the raster lines are about equally spaced vertically.

E. Vertical Height

If the screen image is not large enough or too large vertically, then you can adjust it very easily with this control. Using this control will stretch or compress the image vertically. The vertical height control affects the spacing between the raster lines equally.

Set the game for the diagnostic that displays the convergence grid and dots. Locate the vertical height control on the monitor's Main PCB: it is the second knob from the left underneath the screen. Turn this control until the top and bottom grid lines run along the edges of the screen. The lines should

not disappear off the edges, which would indicate overscanning.

F. Horizontal Width

Before using this control, be sure the monitor has been turned on for 5 minutes or more. If the screen image is too wide or narrow, you should use this control to adjust it for proper width.

Set the game for the diagnostic that displays the convergence grid and dots. Locate the horizontal width control on the monitor's Main PCB: it is the small coil at the center rear of this board. **Be sure to use only a non-metal Allen wrench (commonly called a "tweaking" tool) for this adjustment!** Turn this control until the right and left grid lines run along the edges of the screen. The lines should not disappear off the edges, which would indicate overscanning.

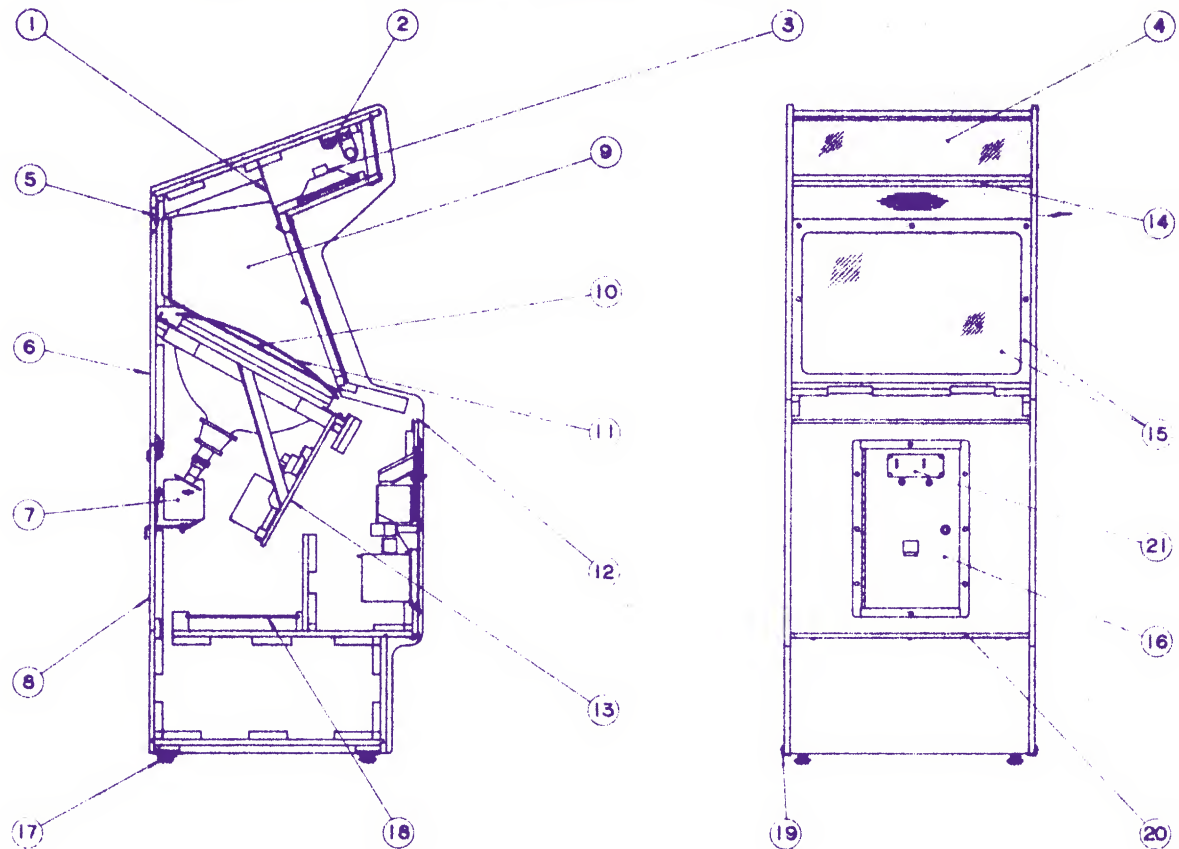
G. Focus

This control simply changes the sharpness of the screen image. The focus adjustment is above the right rear of the monitor's Main PCB; the black adjustment knob protrudes from the high-voltage housing/heat sink. Turn this control until you get the optimum screen sharpness possible.



7 Parts Catalog

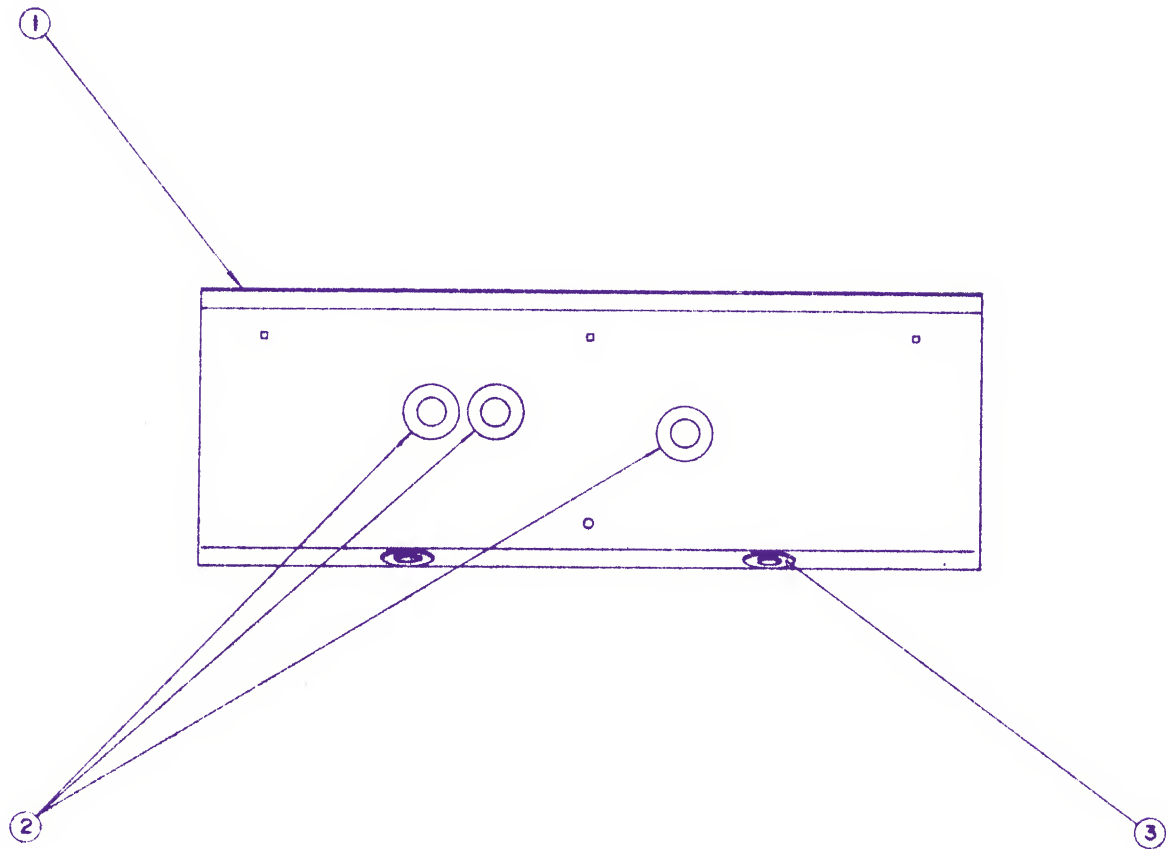
Cabinet Accessory Assy



- | | | |
|----|------------|-------------------------------------|
| 1 | MR-1015 | Light Baffle |
| 2 | MR-1004 | FLUORESCENT LIGHT ASSY, 15W |
| | S-91058 | Fluorescent Light, Black Light, 15W |
| 3 | MR-1009 | Speaker Guard Plate |
| | S-97336 | Speaker, 230 x 150mm, 8Ω, 6W |
| 4 | MR-1012 | Top Panel |
| 5 | MO-1071 | Net Plate |
| 6 | MR-1002 | Back Door, Upper |
| 7 | MR-1019 | JUNCTION BOX ASSY |
| | 97339 | Choke, 1H |
| | S-94972 | Noise Filter, AC250V, 2A |
| | S-94339 | Switch, Micro Type |
| | S-95835 | Cable & Plug Assy |
| | S-96774 | Fuse, 5A, Time-Lag Type |
| 8 | MR-1003 | Back Door, Lower |
| 9 | MR-1017 | Scenery, Right |
| | MR-1018 | Scenery, Left |
| 10 | MR-1016 | Scenery, Rear |
| 11 | MR-1024 | TV Mask |
| 12 | MR-1005 | Trim, Upper |
| 13 | 97232-P | COLOR DISPLAY ASSY, 20TYPE, 120V |
| | 97334-P | COLOR DISPLAY ASSY, 20TYPE, 100V |
| 14 | MR-1007 | Ornament Frame |
| 15 | MR-1013 | Window Panel |
| | MR-1014 | Bezel Frame |
| 16 | MR-1200 | COIN CHUTE DOOR & CASH BOX ASSY |
| | CC-2006 | Coin Chute, Rejector Type, 25¢ x 1 |
| 17 | M-163-4(L) | Leg Adjuster |
| 18 | 97332-P | IC BOARD ASSY, MCON CRESTA |
| 19 | MR-1008 | Corner Protector |
| 20 | MR-1006 | Trim, Lower |
| 21 | 80824 | Denomination Plate, 25¢ |
| | MO-1245 | Coin Entry Plate, USA 25¢ x 2 |

7 Parts Catalog

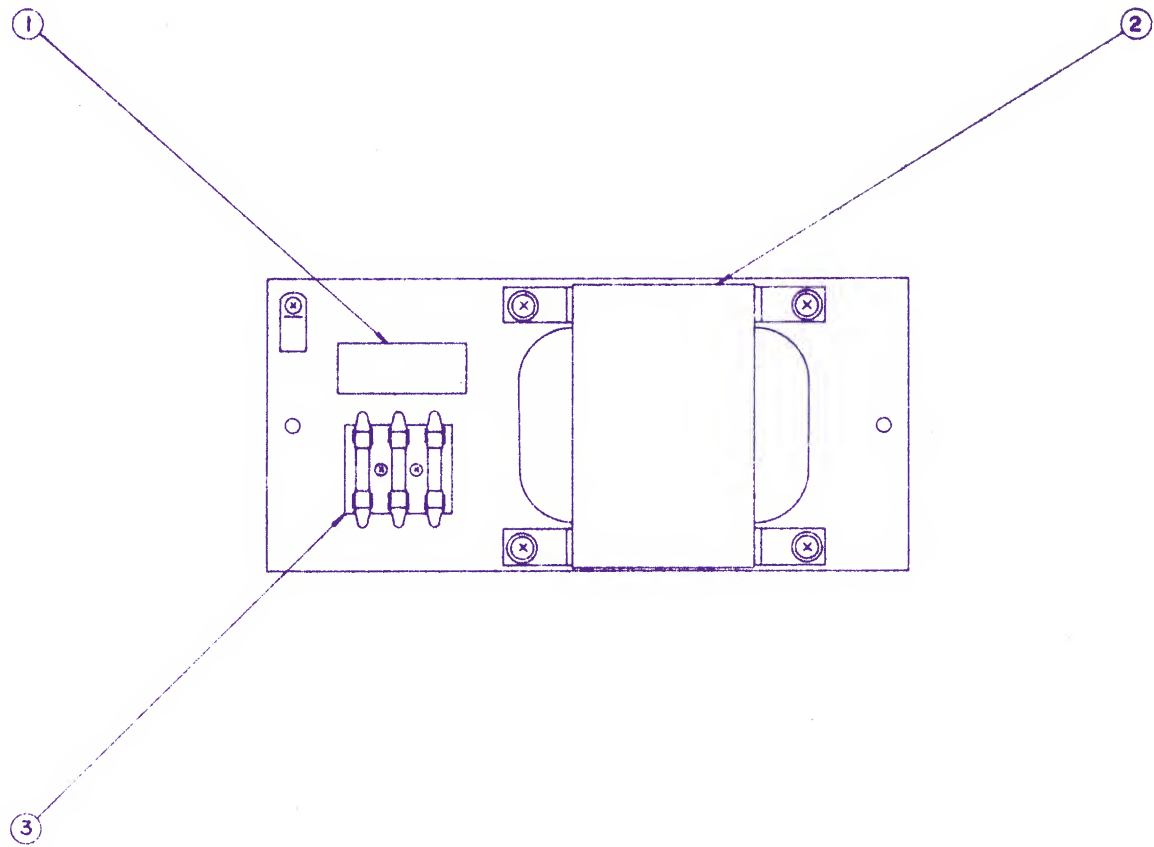
Control Panel Assy



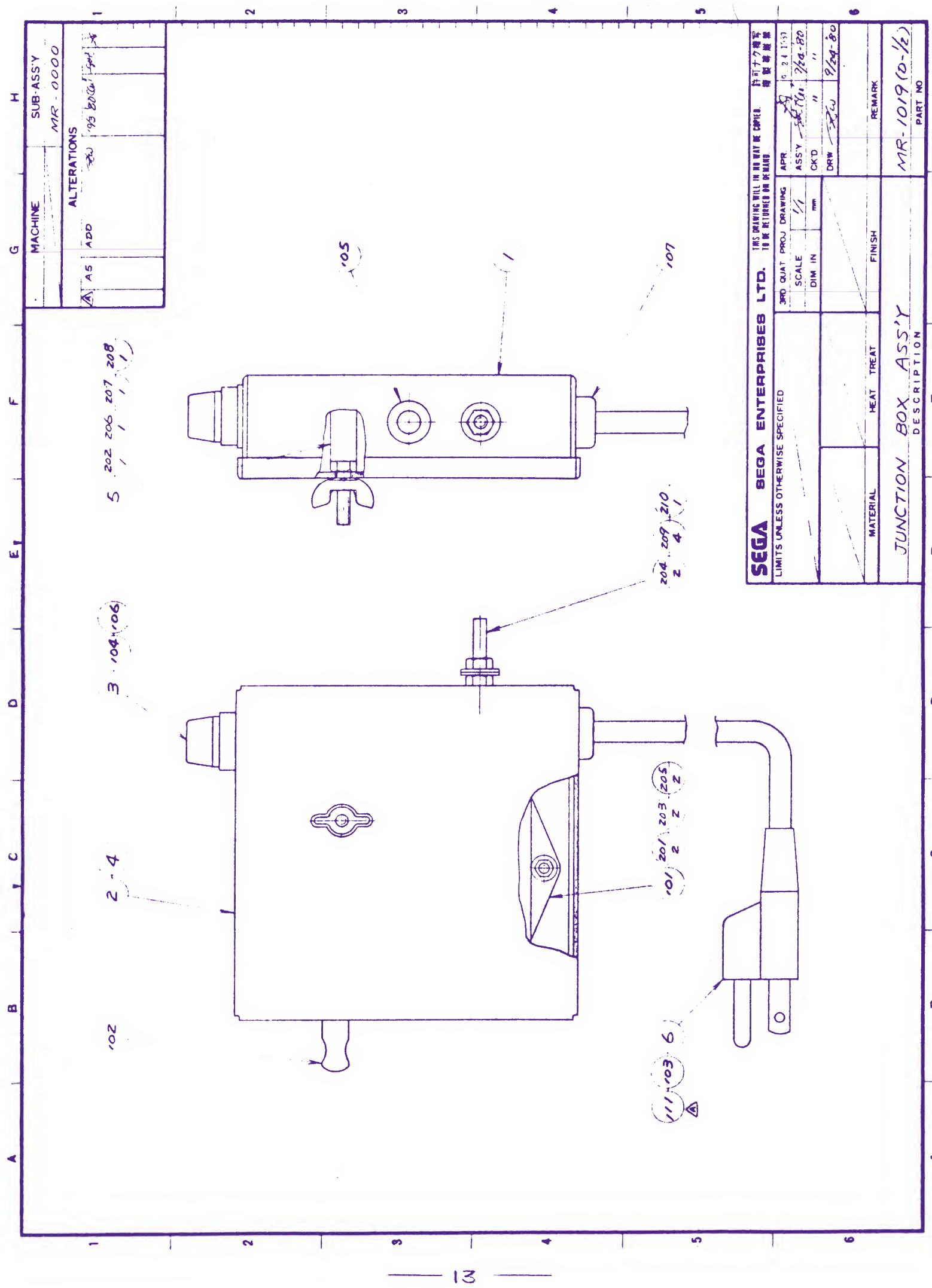
- | | |
|-----------|---|
| 1 MR-2001 | Control Panel Base |
| 2 MR-2005 | Spacer, Switch Wico |
| S-97345 | Button Plunger, Yellow (GREMLIN 240-0009) |
| S-97346 | Assy, Switch Wico (GREMLIN 510-0023) |
| 3 MR-2005 | Spacer, Switch Wico |
| S-97344 | Button Plunger, Black (GREMLIN 240-0007) |
| S-97346 | Assy, Switch Wico (GREMLIN 510-0023) |

7 Parts Catalog

Power Supply Assy



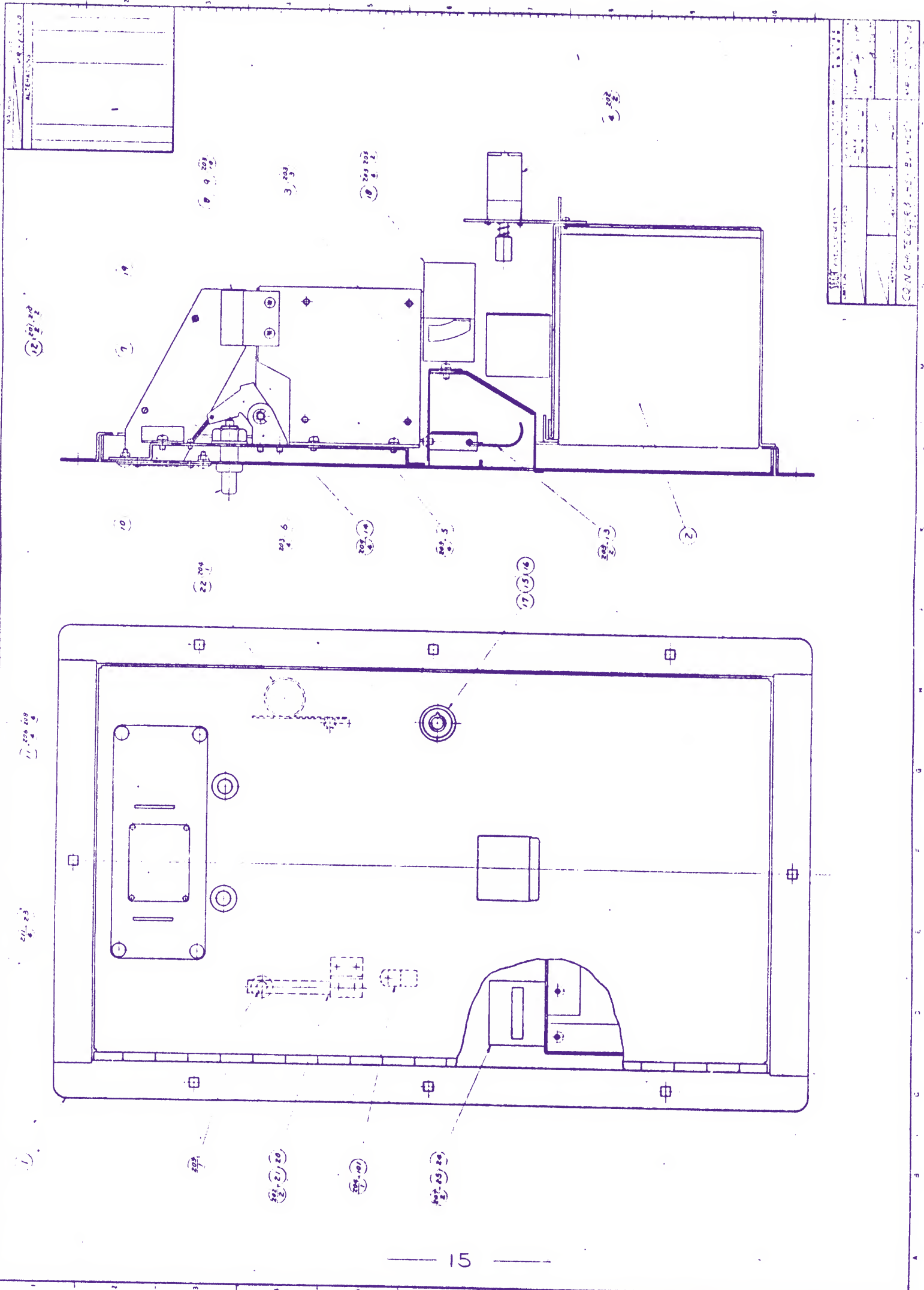
- | | | |
|---|---------|------------------------------|
| 1 | 83334 | Fuse Instructions |
| 2 | 97313 | Power Transformer, 100V-240V |
| 3 | S-93003 | Fuse Holder, 3P |
| | S-96774 | Fuse, 5A, Time-Lag Type |



MACHINE		SUB-ASSY	
		MR - 0000	
ALTERATIONS			
A	AS	ADD	199 8200 199 8200

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LIMITS UNLESS OTHERWISE SPECIFIED	3RD QUAT PROJ DRAWING	APR 0 24 1950	許可なく複製 複製 複製 複製
	SCALE 1/1	ASSY 5/20/50	9/24-80
	DIM IN mm	CK'D "	"
		DRW 9/24-80	
MATERIAL	HEAT TREAT	FINISH	REMARK
JUNCTION BOX ASS'Y		MR-1019 (D-1/2)	
DESCRIPTION		PART NO	

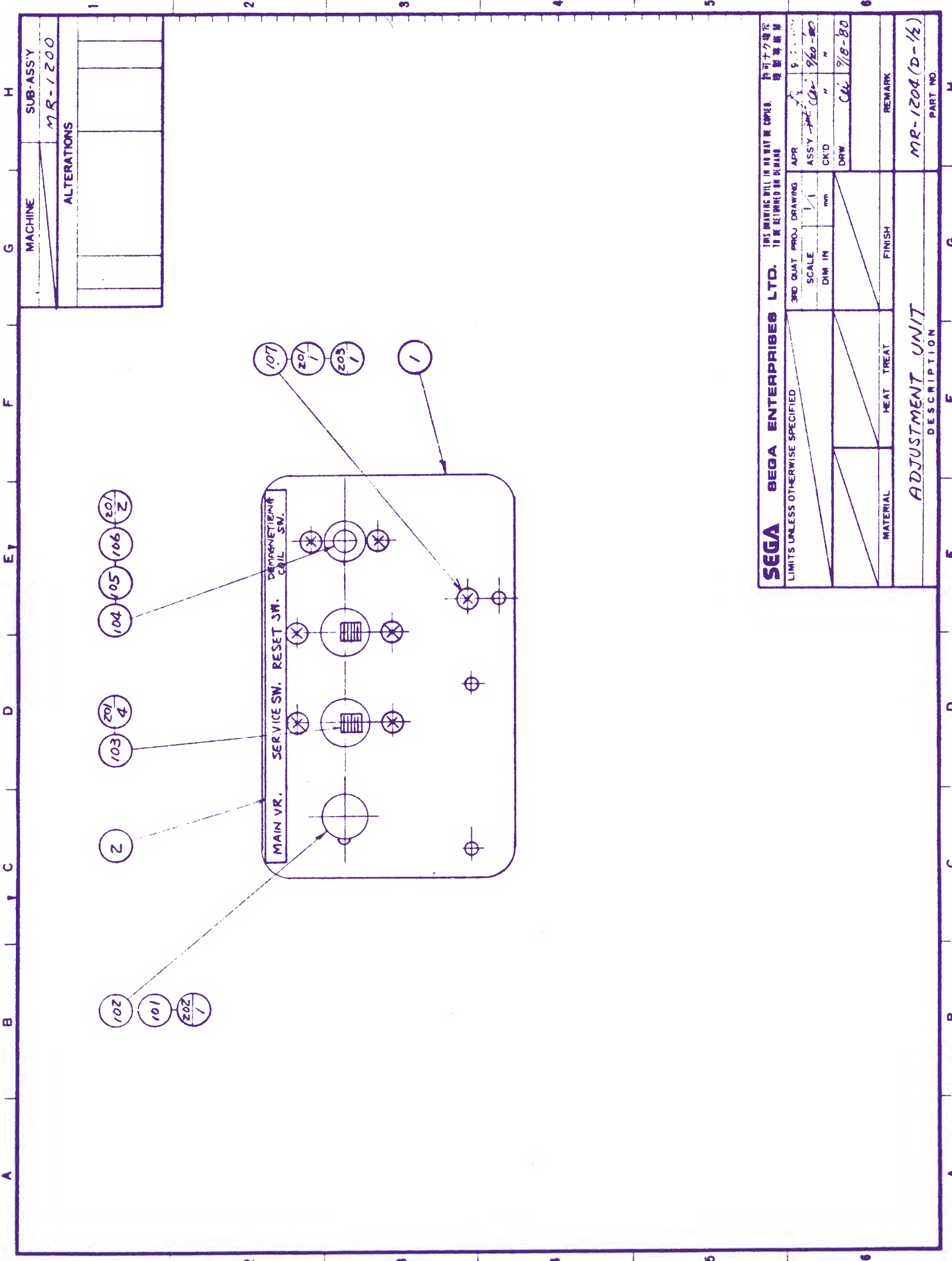
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		MR-1000							
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△	ADD								
△	WAS	111-630	210	9/3-80	210				
210	111-937	1	M. SCREW, P.H. PHILL., BRASS, ISO						M4x25
209	144-269	4	FLAT WASHER, SPECIAL, BRASS						4-12x1
208	133-112	1	WING NUT, ISO						M4
207	133-089	1	HEX. NUT, ISO						M4
206	144-076	1	SPRING WASHER						M4 (*2)
205	144-057	2	FLAT WASHER						M3
204	133-133	2	HEX. NUT, BRASS, ISO						M4
203	133-088	2	HEX. NUT, ISO						M3
202	111-678	1	M. SCREW, F.H. PHILL., ISO						M4x15
△ 201	111-854	2	M. SCREW, F.H. PHILL., ISO						M3x10
△ 111	S-92398	50mm	THERMO-SHRINK TUBE, "HISHILITE" TRANSPARENT,						17.5mm
110	S-96564	2	TERMINAL LUG, ROUND I. D. 5 (AMP 170011-2)						
△ 109	S-91978-1	*3	SOCKET ELEMENT (AMP 170147-1)						
108	S-93542-1	1	SOCKET, 3P, BROWN (AMP 1-480304-1)						
107	S-96148	1	BUSHING, STRAIN RELIEF, 8.3 (HEYCO SR-6N-4)						
106	S-96774	*1	FUSE, 5A, TIME-LAG TYPE, 6.35"x31.75mm (NAGASAWA 61T5)						
105	S-92310	1	RUBBER GROMMET, 7"x10"x4.5 (TAKIGEN 19-79-C)						
△ 104	S-90207	1	FUSE HOLDER, W/SCREW CAP (SATO F-4000)						
103	S-95835	1	(UL STANDARD ROUND TYPE) CABLE & PLUG ASS'Y, W/EARTH, 0.16x41x3, L=3m						
102	S-94339	1	(CHERRY 579-30A) SWITCH, MICRO TYPE, DEPT. CHEAT INTER LOCK TYPE						
101	S-94972	1	NOISE FILTER, AC 250V, 2A (TDK Z9B 2202-01)						
6	97339	1	CHOKE, 14H						
5	FL-3237	1	SPACER TUBE, 26						
4	81319	1	STICKER, 120V						
3	80426	1	STICKER, 5 AMPERE						
2	MR-1021	1	COVER						
1	MR-1020	1	JUNCTION BOX						
D.NO	POS.	PART NO.	Q/U	DESCRIPTION				NOTE	
						APR.	9.22.1980.		
						DRAFT.	9/1/80		
JUNCTION BOX ASS'Y						PARTS LIST:		MR-1019(D-7/2,	
DESCRIPTION								PART. NO.	



MACHINE	SUB-ASS'Y				
MR-1000					
ALTERATIONS					

101	S-90181	1	CLAMP, CORD, PLASTIC, 8mm, I.D.	
25	80931	1	STICKER, COIN METER	
24	90303Z-5-P	1	MAGNET COUNTER, 6 DIGITS, DC 5V	
23	80824	1	DENOMINATION PLATE, 25¢	
22	30060	1	KEY HOLDER	
21	SK-1057	1	TILT SWITCH ASS'Y, IM.	
20	SK-1042	1	SWITCH BRACKET	
19	CC-2006	2	COIN CHUTE, REJECTOR TYPE, 25¢ x 1	
18	CC-2050	2	COIN CHUTE BRACKET ASS'Y	
17	LS-1064	1	ACE CYLINDER LOCK, L.S. TYPE	
16	PB-1022	1	LOCK TONGUE	
15	SW-1108	1	SPACER RING	
14	SH-1007	2	SHAFT	
13	MF-1010	1	FLAP DOOR ASS'Y	
12	OL-3018	2	EXTENSION SPRING	
11	MO-1245	1	COIN ENTRY PLATE, U.S.A. 25¢ x 2	
10	MP-1017	2	REJECT BUTTON ASS'Y	
9	DH-1046	2	COIN ENTRY BRACKET, B	
8	DH-1045	2	COIN ENTRY BRACKET, A	
7	DH-1044	2	REJECT LEVER	
6	DH-1043	2	REJECT LEVER BRACKET	
5	DH-1042X	2	COIN CHUTE BRACKET	
4	MR-1204	1	ADJUSTMENT UNIT	
3	MR-1203	1	COVER	
2	MR-1202	1	CASH BOX	
1	MR-1201	1	COIN CHUTE DOOR	

D NO	POS.	PART NO	Q/U	DESCRIPTION	NOTE
					APR. 9 23 1980
					DRAFT. 9/7-80
COIN CHUTE DOOR & CASH BOX ASS'Y PARTS LIST					MR-1200 (D-3/3)
DESCRIPTION					PART NO



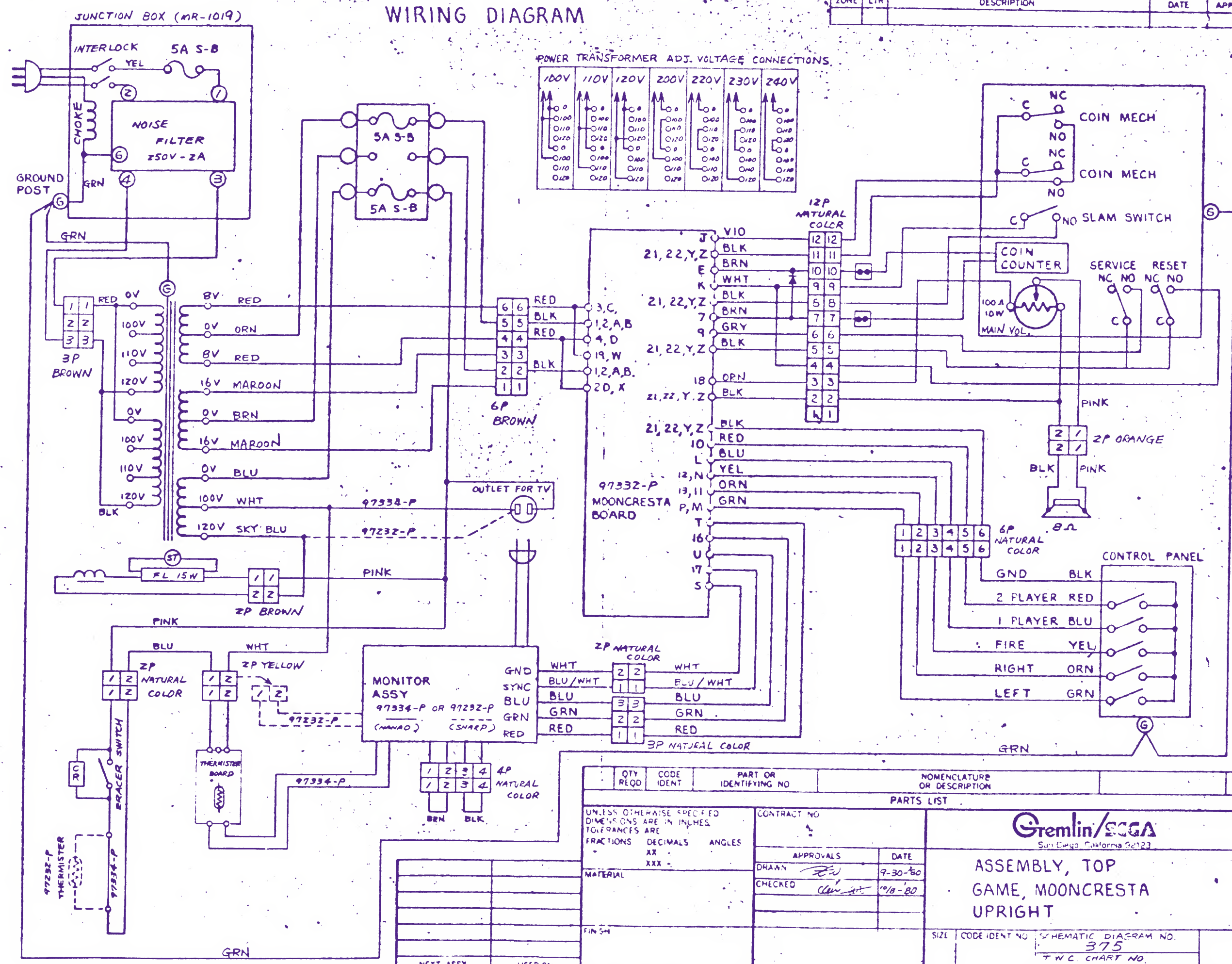
MACHINE	SUB-ASSY
	MR-1200
ALTERATIONS	

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DIM IN		DRW	9/8-80
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ADJUSTMENT UNIT		MR-1204 (D-1/2)	
DESCRIPTION		PART NO.	

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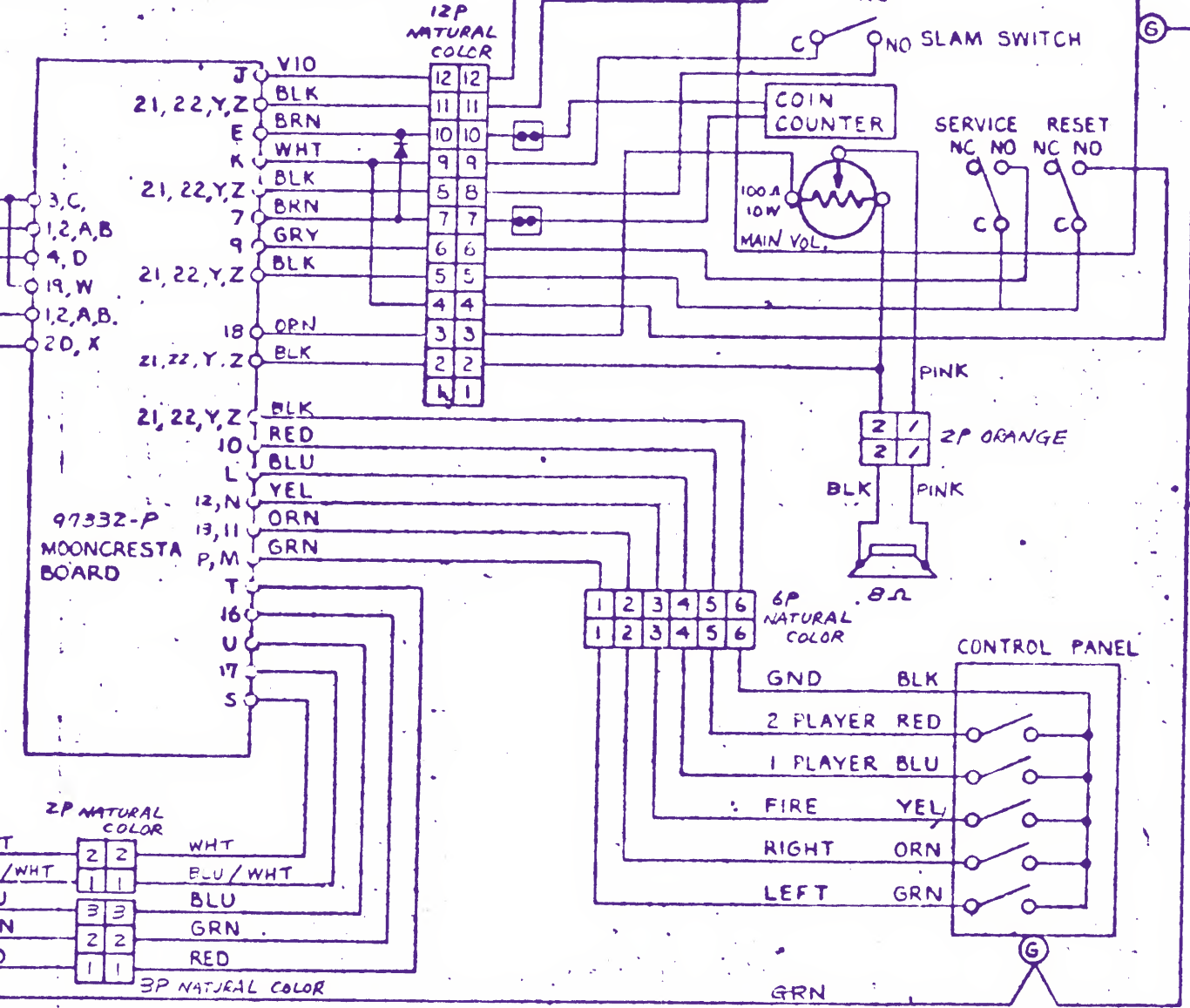
WIRING DIAGRAM

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



POWER TRANSFORMER ADJ. VOLTAGE CONNECTIONS

100V	110V	120V	200V	220V	230V	240V
0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120	0/100 0/110 0/120 0/100 0/110 0/120



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION
PARTS LIST			
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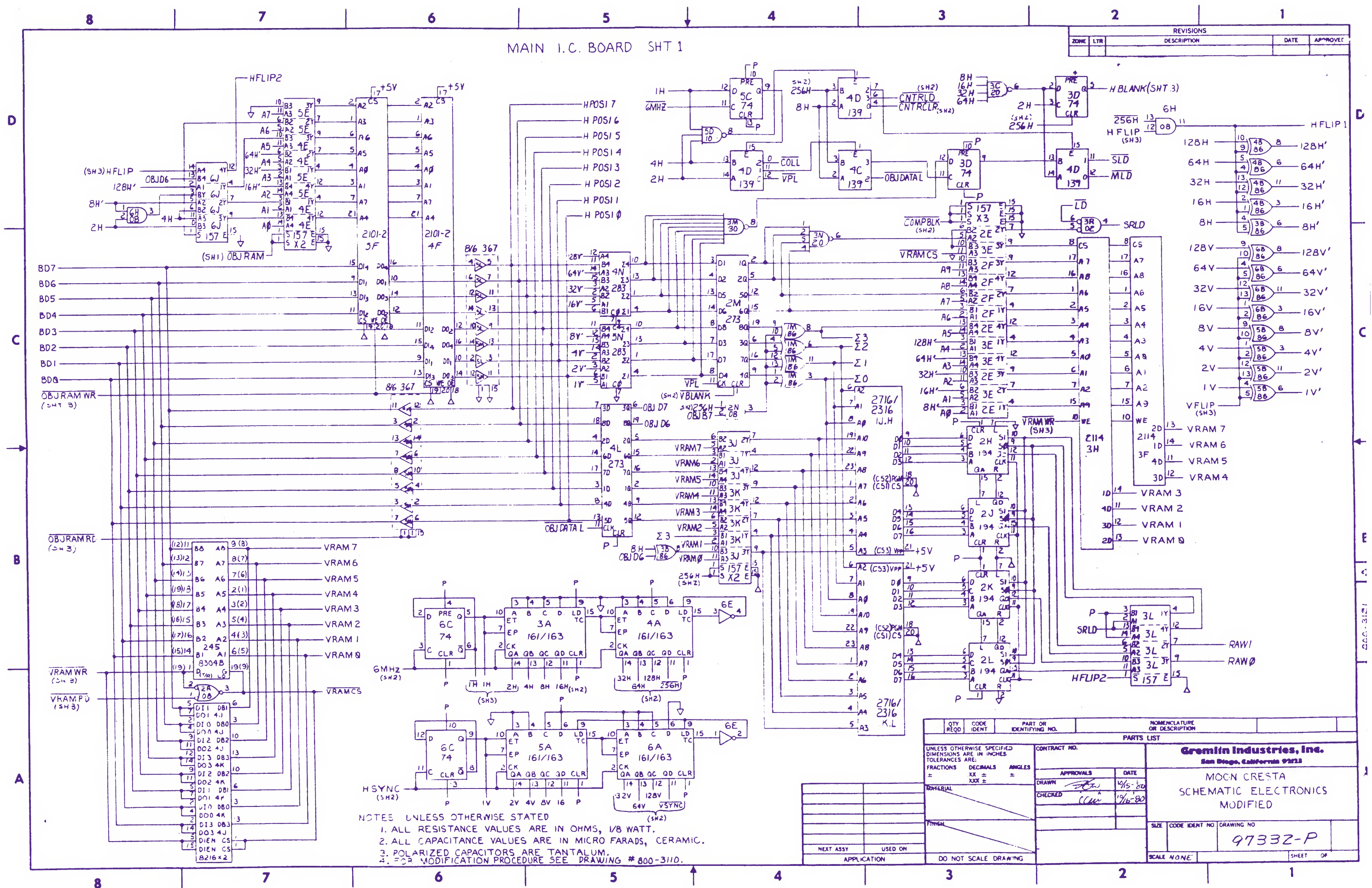
Gremlin/SCGA
San Diego, California 92123

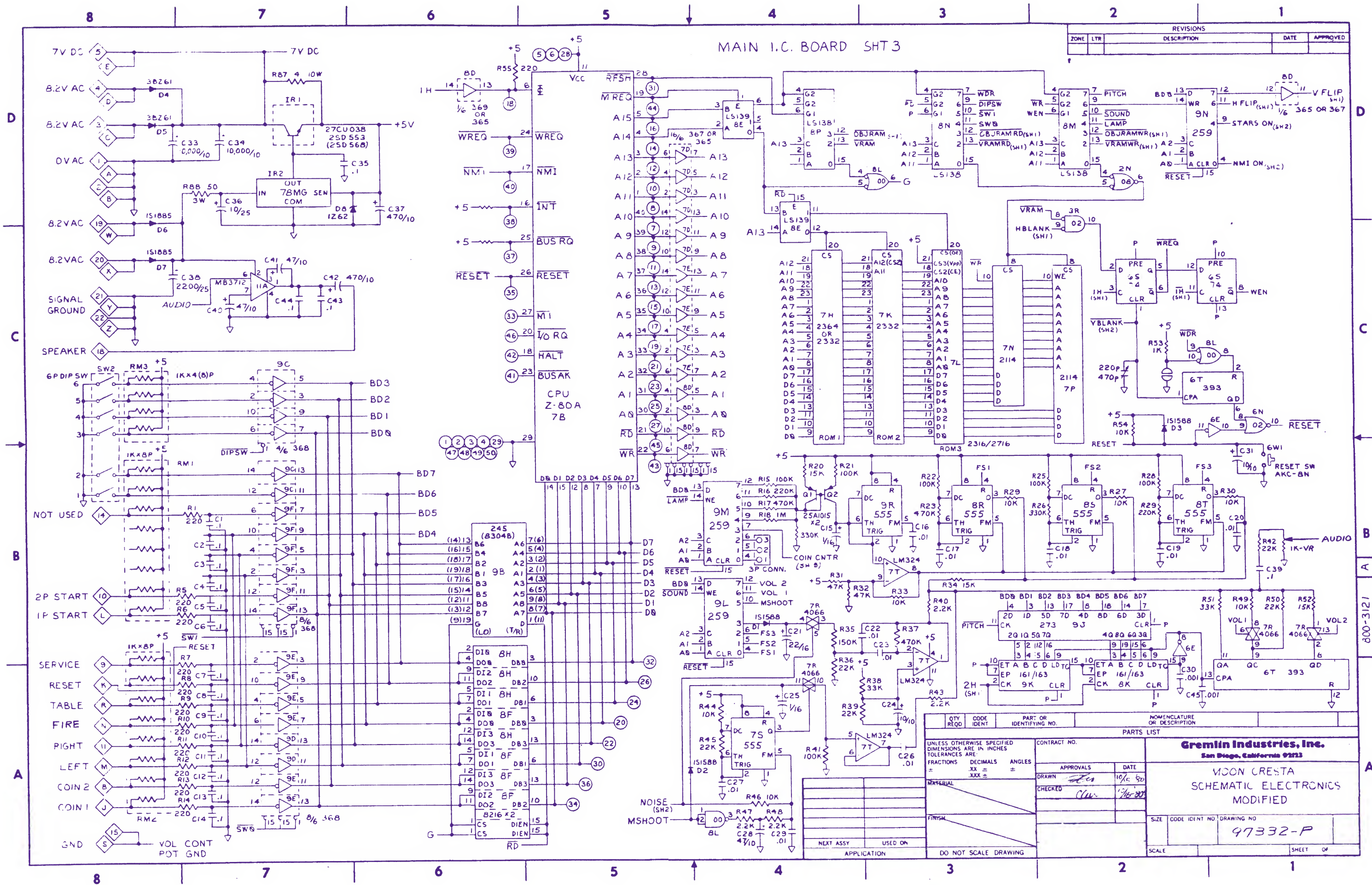
**ASSEMBLY, TOP
GAME, MOONCRESTA
UPRIGHT**

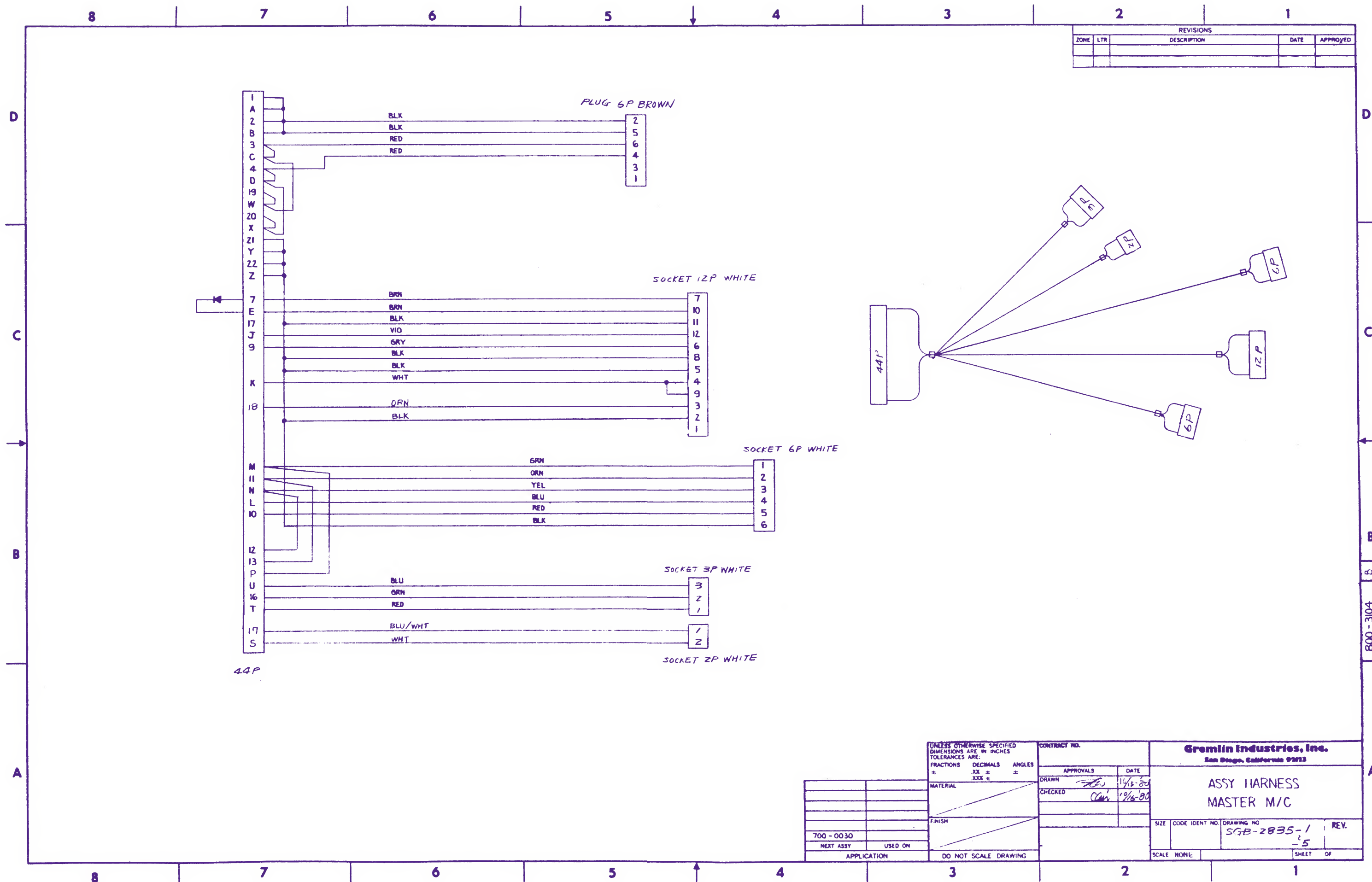
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T.W.C. CHART NO.
SGB-2835

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700-0030 A







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